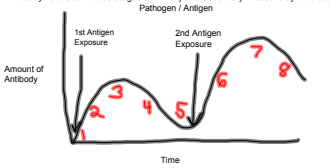
Antibody Levels at Various Stages of Primary and Secondary Infections by a Particular Pathogen / Antigen



1 - Body first encounters antigen (aka pathogen) and initiates a specific immune response, which involves...

A. A macrophage engulfing the pathogen and displaying a portion of the pathogen on its cell membrane to a helper T cell

B. **Cell-Mediated Immunity:** The helper T cell creating cytotoxic T cells (2 varieties - memory cytotoxic T cells and active cytotoxic t cells)

C. **Cell-Mediated Immunity:** The active cytotoxic T cells destroying body cells that have been infected by the pathogen

D. **Humoral Immunity:** The helper T cell creating B cells (2 varieties - memory B cells and plasma B cells)

E. **Humoral Immunity:** The plasma B cells creating antibodies to mark a particular pathogen that is free-floating in the body fluids for digestion by a macrophage

2 - As plasma B cells continue to make antibodies, the amount of antibody molecules increases

3 - The specific immune response removes the pathogen from the body

4 - Since the immune system does not need to expend energy making plasma B cells and antibodies to combat a pathogen that has been successfully removed from the body, levels of this particular antibody decrease

5 - When the body encounters the antigen again, memory B cells immediately convert into plasma B cells and begin creating antibodies

6 - As plasma B cells continue to create antibodies, the amount of antibody molecules increases

7 - The specific immune response removes the pathogen from the body

8 - Since the immune system does not need to expend energy making plasma B cells and antibodies to combat a pathogen that has been successfully removed from the body, levels of this particular antibody decrease

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